Zero Net Energy Buildings Advisory Council Meeting

Friday, November 12, 2010, 9:30AM-12PM

MEETING NOTES

Participants in Attendance:

Advisory Council Members	**Inter-Agency Team Members**
Fran Boucher, NGRID Mike Browne, Advanced Building Analysis Penni Connor, NSTAR Paul Eldrenkamp, Byggmeister, Inc. Rick Gilles, Barnraisers Bryan Glascock, City of Boston (for Jim Hunt) Jonathan Kantar, Sage Builders Betsy Pettit, Building Science Corporation Carter Scott, Transformations, Inc. Chris Schaffner, The Green Engineer, LLP Rhonda Spector, MassDevelopment Mark Walsh-Cooke, ARUP	Marc Breslow, EEA Janet Curtis, DOER Ian Finlayson, DOER Eric Friedman, DOER Yaara Grinberg, DOER Jenna Ide, DCAM Shirin Karanfiloglu, DCAM Alissa Whiteman, DOER
Absent Members Bruce Coldham, Coldham & Hartman Architects Jim Hunt, City of Boston Deborah Rivers, Perkins + Will John Rosenthal, Meredith Management, Co. Ellen Watts, Architerra, Inc. David Weitz, Conservation Services Group	Karl Brown, MSBA Frank Gorke, DOER Phil Giudice, DOER Meg Lusardi, DOER Larry Masland, DOER Tom Riley, DPS-BBRS Alex Sherman, DOER

Welcome and introductions

Eric Friedman, Director, Leading by Example Program, DOER
Around the room introductions.

Progress Reports and Updates

CODES

Buildings Codes – *Ian Finlayson, Manager, Building and Climate Programs, DOER*

- IECC adopted the 2009 code (MA stretch code) for 2012 base for commercial buildings

Code Compliance

- Code compliance pilot survey underway – measuring building code compliance and energy performance in residential construction. HERS rating and PNNL check list will be used in the survey, and based on its results, modifications to the code training will be made.
- Code support/compliance – this initiative is intended to track code compliance with infra-red scans of building envelopes (residential). This information will be available in a secure data base accessible to home builders. Builders will be able to see only the homes they built, and where improvements can be made The idea is to inform the builders as well as

provide an incentive for them to attend the codes training where they can get additional information.

- Taking a sample of permits pulled in the last five years, 2005-2010
- Compliance efforts hope to motivate builders to improve building performance

INCENTIVES

Solar Thermal – *Ian Finlayson, Manager, Building and Climate Programs*

- Goal of the Clean Energy Center (CEC) is to develop pilot solar thermal commercial and residential programs; pilot would likely be 18 months to two years and following that, a "longer-term plan" would be developed. Economics are not quite there yet for solar thermal (especially now that natural gas prices are so low)

ARRA/Solar – *Eric Friedman, Director of the Leading by Example Program*

- Up to 12MW installed in Massachusetts in the public and private sectors. By spring 2011, there will be approximately 4 MW installed at state facilities. ARRA solar map.

Comment: Bryan Glascock - **City of Boston** has taken out cost of PV panels for filing fees – differentiating between actual construction and components.

Financing – *Ian Finlayson, Manager, Building and Climate Programs*

- Heat Loan Program – primary financing tool used in MA, where homeowners can access a loan with no interest to get funding for any eligible MassSave efficiency measures.
- The financing team at DOER is looking into another loan program that would provide low interest rates, ensure more rapid approval, and target efficient heating systems

WORKFORCE DEVELOPMENT AND TRAINING

Re-Tuning – *Yaara Grinberg, Clean Energy Fellow, Buildings Programs, DOER*

- Re-tuning is "retro-commissioning lite", it is a systematic, semi-automated process of detecting, diagnosing, and correcting operational problems with building automation systems (BAS) and their controls, with a specific focus on lighting and HVAC equipment and can achieve up to 15-20% in energy reductions.
- Funded by DOE, the Pacific Northwest National Laboratory (PNNL) Re-tuning Training held an all-day classroom workshop last week in Boston with a focus on larger commercial buildings. PNNL is planning to have an on-site training in two large commercial buildings in the beginning of December 2010.
- The innovative aspects of the training include two features: 1) PNNL developed a clear methodology for the re-tuning process, with a focus on the post-tuning phase, and 2) the building operators are provided with an excel-based tool that facilitates their ability to track the energy performance of the building.

Comment: Fran Boucher/NGRID – can re-tuning be available for municipalities? It would be helpful to have a one page document that summarizes the scope of re-tuning.

Mass Clean Energy Center –

Clean energy/weatherization job training programs launched at four state community colleges; Springfield Technical Community College, Greenfield Community College, North Shore Community College, and Bristol Community College.

Press release: http://www.masscec.com/index.cfm/page/MassCEC-Announces-Energy-Efficiency-Training-at-Four-Community-Colleges/cdid/11661/pid/11150

ADVISORY COUNCIL MEMBER UPDATES

Chris Schaffner:

USGBC is soliciting comments for LEED 2012. People can submit comments until 12/31/2010 using the following link: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=2360

Paul Eldrenkamp:

Presented brief updates on three deep energy retrofit (DER) residential projects.

1) Framingham single family home – baseline HERS 135, with DER, HERS 57. If homeowners add PV (approximately 7 kW), house will get to zero. Total re-model project $100,000. Some non-energy work. NSTAR providing $42,000.
2) Belmont two-family retrofit (case study will be on Building Science Corporation's website). Baseline HERS 197, after DER 42.
3) Jamaica Plain three-family home. Baseline HERS 85, after DER 57. Limitations with DER because family replaced boiler/mechanicals first – before any envelope work… so cost per reduction per HERS point was not cost-effective.

Comments:

Betsy Pettit - Need to get people to upgrades in the right order!
Getting existing homes to zero very difficult…
Need a step-by-step DER program/guide for homeowners – need to educate homeowners – develop a visual tool.
NGRID developing incremental DER program.
Passive house for existing homes – BSC standards?

Betsy Pettit:

Building Science Corp. developing case studies for all NGRID deep energy retrofits. They will be posted on BSC's website as well as Affordable Comfort's website.

Carter Scott:

Working with MassDevelopment, will be developing 8 zero energy homes at Devens. Base price will be $350,000 or less. Working to get plug-in stations for vehicles.
Building 33 zero net energy homes in Easthampton – implementing nine different designs (working with BSC). Also looking to develop plug-in stations powered by PV.

Group Discussion – *facilitated by Eric Friedman*

Does Massachusetts need ZNEB Plan?

Jonathan – In Newton, for example, the zoning requirements are intended to integrate a strategy that will go beyond codes toward ZNEB, but there is a challenge in developing a plan of action, therefore a model, such as a ZNEB Plan can help in directing such efforts.

Jenna I. – Action plan should be statewide but community oriented – don't focus in on individual ZNEBs but the broader: "how to"

Penni C. – When developing a plan, keep in mind GWSA and other advisory groups at play

Chris S. – framing "action" in the context of climate change

Fran B. – We do need a plan… the climb to het "there" is very, very steep. What does mid-point look like?

Mark W-C. – Very difficult to give specific "instructions" but rather an approach. Highlight building specific areas 1) Design 2) Build

Ian F. – ZNEB a "big tent" – Compare all construction against zero. Frame conversation: "How are doing relative to zero?"

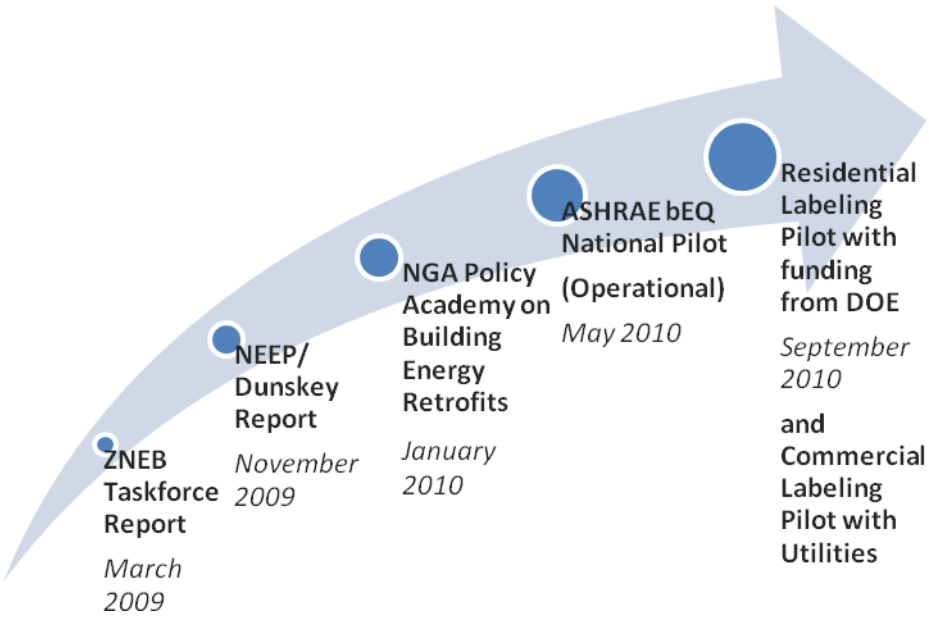
Jenna – technology in some ways not there yet… need more than just PV for energy generation – very limited in our options.

Betsy – DOE has taken NZE out of the name/framing of programs – focus more on energy efficiency or "near zero"

Rick – who will do work and how? Contextualize given the current economy… we've lost many architects and builders

Commercial Building Labeling

BUILDING LABELING UPDATE – *Yaara Grinberg, Clean Energy Fellow, DOER*
Commercial Building Asset rating report
"Where Are We Now?"



"Pathway to EE Investments"

"Topics for Discussion"

- What information should be on the label?
  - Energy rating
  - Comparison to peer buildings
  - EUI
  - BTUs
  - Greenhouse Gas Emissions
  - Cost
- How should the rating be communicated?
  - Letter grades
  - Stars
  - Numerically
- Other considerations
  - Vertical vs. horizontal
  - Use of colors
  - Only one or more ratings (e.g. energy and GHG)

Next Steps

- Release labeling white paper report – November
- Get feedback – December – January 2011
- Work with utilities to integrate pilot with incentive programs
- Design label pilot
- Implement label pilot in Boston and Cambridge and Merrimack Valley

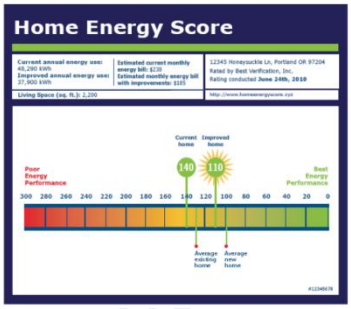
GROUP DISCUSSION

What should a commercial building label look like?

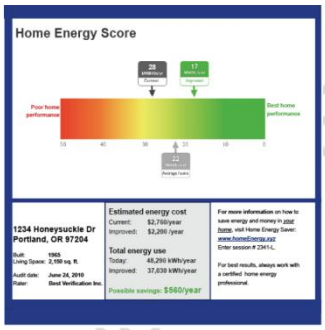
Note: samples are for residential.

Label 1

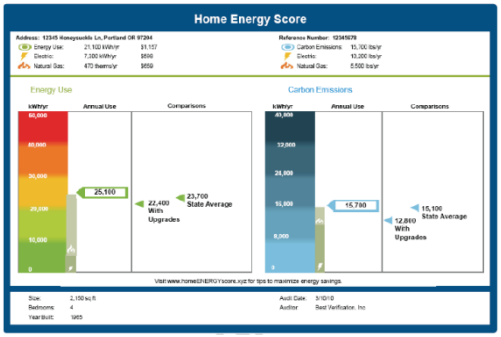
Label 2



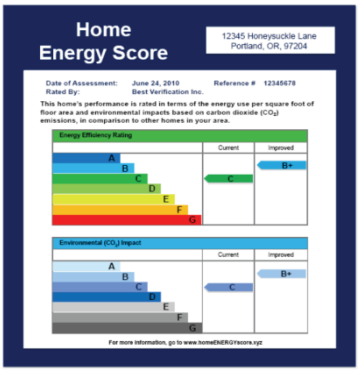
Label 3



Label 4

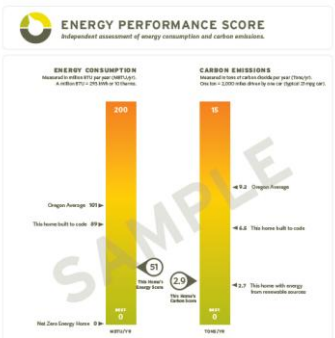


Label 5

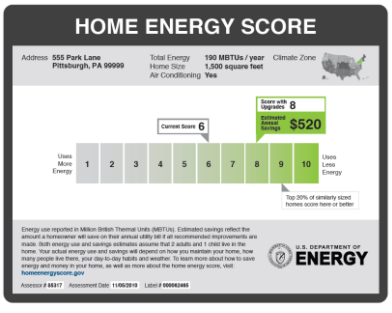


Label 6

Label 7



Label 8



The vote among Council Members and Staff….

LABEL NUMBER	VOTE TOTAL	COMMENTS
1	4	Familiar consumer image – may be confusing.
2	12	Simple – horizontal bar – clear. Simialr label to Energy Star appliances – familiar to people.
3	4	
4	9	Emphasizes carbon emissions as well as energy use. Would be better horizontal instead of vertical. Somewhat difficult to comprehend.
5	4	
6	2	Not clear. No clear scale. Aestetically not compelling… points our score efficiency relative to improvements. "Improvemnets" doesn't belong on the label.
7	3	
8	9	Clear graphics – although scale goes in the wrong direction. HERS-type scale with clear graphic would be more effective. A 10 scale vs. a 100 scale is not as effective – finer gradation preferred.

TOP THREE LABELS PREFERRED: 2, 4, 8

General Comments:

- Label should be a "quick to understand visual"
- Label should provide as much data as possible… don't dumb it down – make it one-stop shopping of both data and graphics.
- Simple scale as well as lots of data

What would you do for commercial building scale?

- Commercial buildings scale needs to compare to other buildings – a letter grade is quick and understandable for public display
- Familiar/simple for public; detailed report for owner/leasee

What is the longevity/durability of a building label?